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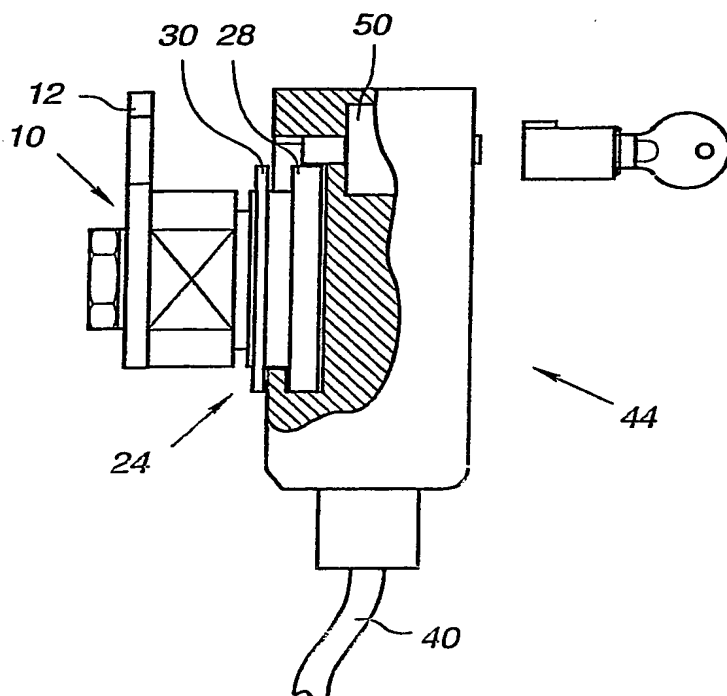
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(54) Title: AN ARRANGEMENT FOR ARRESTING A PORTABLE OBJECT TO A STATIONARY OBJECT BY A CABLE



(57) Abstract: An arrangement for arresting a portable object, such as a desk computer, to a stationary object using a cable (40), one end of which is looped around the stationary object. The other end of the cable (40) is secured to a block-like cable-shoe body (44). An oblong circular cavity (46) is formed in the body (44) with an undercut portion (48) extending along about 180 degrees of one side thereof. Further provided is a lock member (10) having a ribbed attachment portion (24). The attachment portion (24) comprises a recess (26) defined between first and second ribs (28; 30) and is adapted to be inserted into the cavity (46) and shifted into engagement with the undercut portion (48), and then locked therein by push-in key operated device (50). Said lock member (10), with ribbed attachment portion (24) is affixed to a side wall of the portable object in various conventional manners.



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JC20 Rec'd PCT/PTO 28 JUL 2005

**AN ARRANGEMENT FOR ARRESTING A PORTABLE OBJECT TO A****STATIONARY OBJECT BY A CABLE****FIELD OF THE INVENTION**

5           The present invention generally relates to security devices. More specifically the invention concerns the safeguarding of desk computers against theft by tying the computer casing by a steel cable to a fixed object, say around the nearest desk leg.

**BACKGROUND OF THE INVENTION**

10           Using a steel cable as computer anti-theft means, in particular with regard to portable computers, is not new: see, e.g. US patents Nos. 5,327,752 and 6,244,082. The innovative efforts were mostly directed as how to connect the cable to the computer casing without introducing major changes. As reflected by the above-mentioned patents, the solution found was to make use of a slot-shaped opening  
15           formed OEM at one of the casing walls. For less expensive, sheet metal desk computers, the problem has not yet been satisfactorily solved.

          It is therefore the prime object of the invention to harness the sheet metal desk computer casing to a cable via means already existing in the conventional construction of such computers.

20           It is a further object of the invention to convert the conventional door lock of certain brand computers (IBM and others) into a universal attachment for a specially designed cable shoe.

It is a still further object of the invention to provide a "universal" attachment and fitting cable-shoe, forming together useful and convenient means for arresting any portable object, by the cable to a stationary object.

## 5 SUMMARY OF THE INVENTION

Thus provided according to the invention is an arrangement for arresting a portable object such as a desk computer against a stationary object by looping around the stationary object one end of a cable, the other end thereof being provided with a key-operated locking device, the arrangement comprises: a block-  
10 like cable-shoe body; an oblong circular cavity formed in the body with an undercut portion extending along about 180° of one side thereof; a ribbed attachment member, adapted to be inserted into the cavity and shifted into engagement with the undercut portion, and then locked thereinside by the key-operated device; and the portable object being provided with said ribbed attachment member affixed to a side  
15 wall thereof.

The cable-shoe and ribbed attachment member may be used for a variety of applications, such as in combination with hook locks, padlock ears, tongs locks, or as "stand-alone" devices.

## 20 BRIEF DESCRIPTION OF THE DRAWINGS

These and other constructional features and advantages of the invention will be more clearly understood in light of the ensuing description of a preferred embodiment thereof, given by way of example only, with reference to the accompanying drawings, wherein:-

Fig. 1 is a general, perspective view of a computer door locking device modified according to a preferred embodiment of the invention;

Fig. 2 is a perspective view of a cable with cable-shoe provided according to a preferred embodiment of the invention;

5 Fig. 3 is a cross-sectional view of the door lock of Fig. 1;

Fig. 4 is a rear view of the lock of Fig. 3;

Fig. 5 is a front view of the lock of Fig. 3;

Fig. 6 is a cross-sectional view of the cable-shoe of Fig. 2;

Fig. 7 is a front view of the cable-shoe of Fig. 6;

10 Fig. 8 shows in partial cross-section the door lock and the cable-shoe in the mating, locked position;

Fig. 9 is another example of a computer lock;

Fig. 10 partly shows a pair of padlock lockable ears in certain models of desk computers for locking the casing thereof;

15 Fig. 11 shows the locking position of the lock of Fig. 9 against the ears of Fig. 10;

Fig. 12 is still another embodiment of a computer security lock;

Fig. 13 illustrates the cable-shoe of the previous embodiments in an arresting position applied to the lock of Fig. 12;

20 Fig. 14 illustrates the use of an attachment member and cable-shoe applied to any kind of wall surface; and

Fig. 15 shows how the cable-shoe is used for safeguarding, in addition, other equipment such as a "mouse" or keyboard.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Certain models of desk computer casings made of sheet metal with a hinged rear- or side-walls, are equipped with a most simple cylinder lock (often called "mail-box" locks). The following described embodiment of the invention is based on a  
5 substitute of this conventional, almost primitive and easily tampered with, lock by a locking device of an improved design.

Hence, in Fig. 1 there is shown lock 10 which comprises a rotatably mounted hook member 12. The rotation of the hook member is effected by a push-in type lock 14 (see Fig. 3). The operator square pin 14a of the lock 14 is passed through the  
10 hook member 12 and fastened by nut 16.

The lock 10 is mounted to wall 18 of the computer in the conventional manner, namely by using a springy, bifurcated clip 20 adapted to fit into a pair of slits 22a and 22b. The major, unique part of the lock 10 consists of a "universal" attachment portion generally denoted 24. This is the core of the present invention  
15 and common to all applications and embodiments; it may even be applied as a "stand-alone" article (see Fig. 14).

The attachment portion 24 comprises a circular (in this example) recess 26, defined between first and second shoulders or ribs 28 and 30 of equal diameters. The roll of this double-rib structure will be readily understood in view of the  
20 description below.

Turning to Figs. 2, 6 and 7, there are shown steel cable 40 looped around an immovable object such as table leg 42. The other side of the cable 40 is connected to a cable-shoe generally denoted 44, and is preferably freely rotatable thereinside. The cable-shoe is generally block-shaped. At its front side, an elongated circular

cavity 46 is formed, delimited at its lower side by gradually increasing lip 48, of the same diameter (or actually radius) as that of the circular rib 28. Due to this configuration it is made possible to insert the rib 28 of the lock 10 (Fig. 1) head-on into the upper part of the cavity 46, and then, by a short lifting movement of the cable-shoe, bringing it into engagement with the lip 48, embracing the rib 28 along about 180° - see Fig. 8. A push-in type lock 50 is seated in the cable-shoe body 44 so that its projectable lock pin 50a, when actuated, obstructs the upwards movement of the rib 28 and hence the disengagement of the computer lock 10 from the cable-shoe 44.

It will be readily understood that, with regard to this embodiment, two goals are achieved: the primitive conventional cylinder lock is replaced by a more sturdy and safe one, at no significant extra cost; and the cable-shoe is freely rotatable by 360°, which enhances the convenience of its use due to the inflexible nature of the cable. This, however, will not be the case if the circular ribs 28 and 30 – and consequently also the outline of the cavity 46 – be made non-circular (e.g. elliptical or squarish).

The locking device 110 of Fig. 9 is designed to lock computers (or any other article such as toolboxes) by a padlock inserted through a pair of ears 150a and 150b as schematically depicted in Fig. 10.

The lock 110 is generally a block-shaped body with a push-in locking device 114 implanted so that the operator pin 114a thereof is adapted to project into a slot 152 configured to receive the ears 150a, 150b (Fig. 11).

To the back of the lock body 114 there is fastened, e.g. by bolt 154, (or made integral therewith) the universal attachment member 124 of the design already familiar from the previous embodiment.

The cable-shoe 144 is shown in phantom lines in Fig. 11, by which the lock body 110 is arrested by cable 140 to a stationary object (not shown). To this end, the ears 150a and 150b are inserted into the slot 152 and the push-in lock 114 is operated so that its operator pin 114a becomes inserted into the padlock openings.

In the embodiment illustrated in Figs. 12 and 13 use is made of a known per-se device which is provided with a pair of pivotable tongs 252a and 252b adapted to become spaced-apart by rotating a screw-threaded pin 254. The tongs are insertable into a dedicated slot 256 formed in the portable computer wall 218 (as known in the art) and are then spread for locking. Now, according to this embodiment of the invention, the body carrying the tongs mechanism is shaped as a universal attachment member 224, namely fit to be engaged by cable-shoe 224 as in the previous embodiments.

Fig. 14 represents a most simple implementation of the invention. The universal attachment member 324 is in this case mounted to wall 318 by gluing, e.g. using a double-sided, peel-off paste patch 360.

Fig. 15 illustrates the cable-shoe 444, modified in the sense that it is useful to entrap and secure, say, "mouse" 462, besides and simultaneously with arresting the computer proper. This is simply attained by providing a slot 466 into which cable 464 of the mouse 462 is placed before attaching the cable-shoe 444 to the side wall of the computer.



In summery, the arrangement proposed according to the invention offers a simple and low-cost solution to the ever-increasing stealing problem of computers or other valuable portable objects.

Those skilled in the art to which this invention pertains will readily appreciate  
5 that numerous changes, variations and modifications can be effected without departing from the true spirit and scope of the invention as defined in and by the appended claims.

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**WHAT IS CLAIMED IS:**

1. An arrangement for arresting a portable object, such as a desk computer, against a stationary object by looping around the stationary object  
5 one end of a cable (40), the other end thereof being associated with a key-operated locking device (50), the arrangement comprises:

- a block-like cable-shoe body (44);
- an oblong circular cavity (46) formed in the body (44) with an undercut portion (48) extending along about 180° of one side thereof;
- 10 - a ribbed attachment member (24), adapted to be inserted into the cavity (46) and shifted into engagement with the undercut portion (48), and then locked thereinside by the key-operated device (50); and
- the portable object being provided with said ribbed attachment member (24) affixed to a side wall thereof.

15

2. The arrangement as claimed in Claim 1 wherein the key-operated device (50) is of the push-in type.

3. The arrangement as claimed in Claim 2 wherein the ribbed member  
20 (24) is circular and having a circular rib (28) extending therearound fitting into said undercut portion (48).

4. The arrangement as claimed in Claim 3 wherein the ribbed member (24) forms the outer part of a rotatable hook-type computer door locking device.

5 5. The arrangement as claimed in Claim 4 wherein the hook-type locking device is operable by a push-in locking device.

6. The arrangement as claimed in Claim 3 wherein the ribbed member (24) forms the outer part of a block-shaped body (110) having a slot (152) into which a pair of padlock lockable ears (150a; 150b) are insertable, a push-in type locking device (114) is provided so that upon actuation thereof the ears (150a; 150b) become engaged by the operator pin (114a) of the push-in type locking device (114).

15 7. The arrangement as claimed in Claim 3 wherein the ribbed member (224) forms the outer part of a screw operated spreadable tongs (252a; 252b) device adapted to be locked against a standard dedicated slot (256) formed at a wall (218) of said portable object.

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20 8. The arrangement as claimed in Claim 3 wherein the ribbed member (324) is attachable to a wall (318) of said portable object by an adhesive patch (360).

9. The arrangement as claimed in Claim 1 wherein the cable-shoe body (444) is formed with a slot (466) traversing said cavity for enabling a cable of additional equipment to pass therethrough and become secured to the portable object upon locking the cable-shoe (444) thereagainst.
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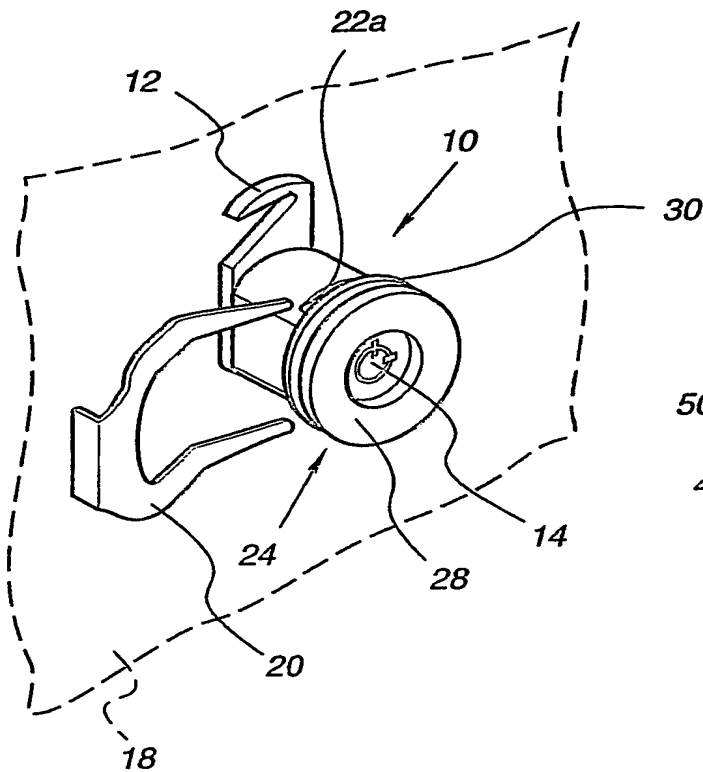


FIG. 1

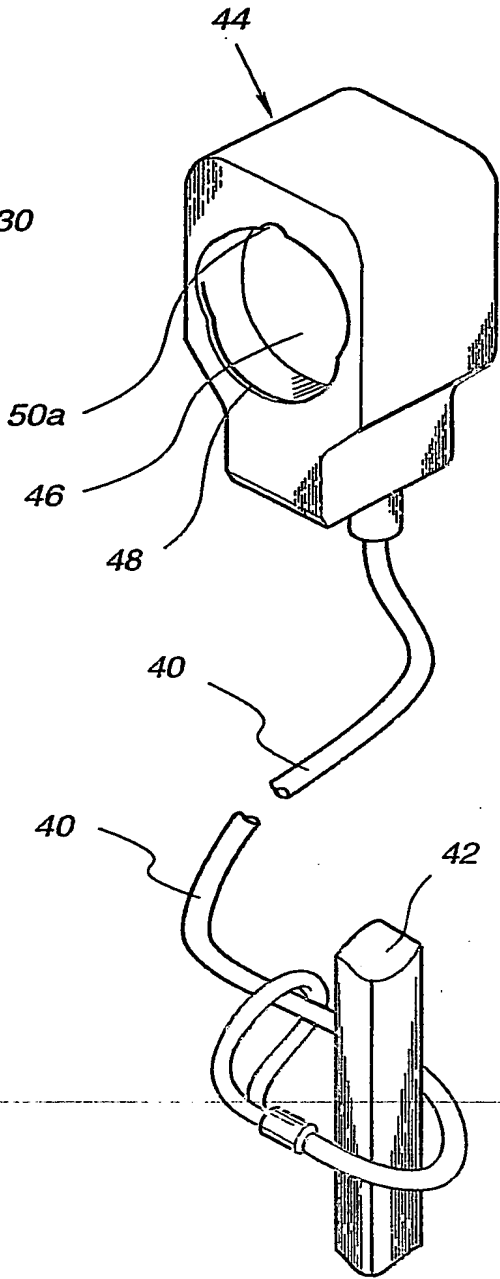


FIG. 2

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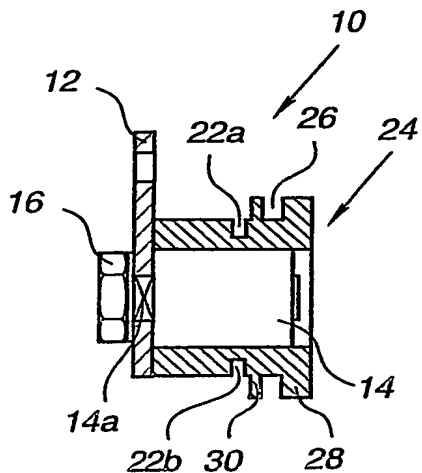


FIG. 3

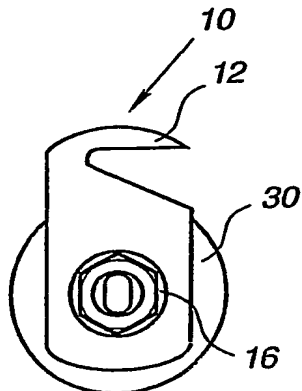


FIG. 4

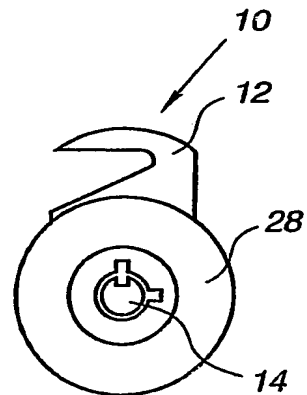


FIG. 5

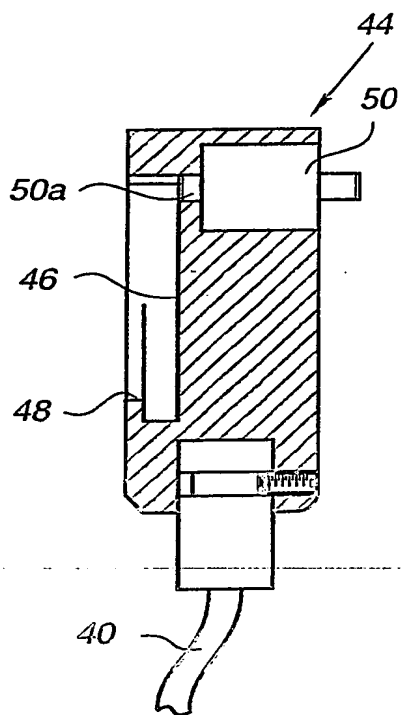


FIG. 6

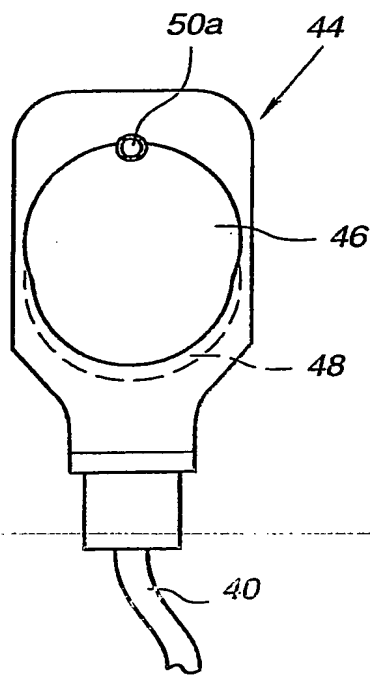


FIG. 7

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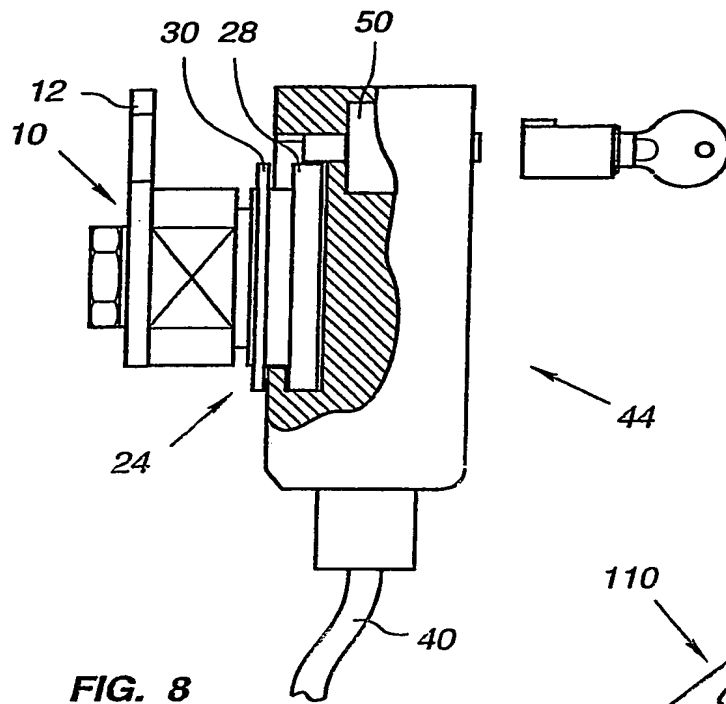


FIG. 8

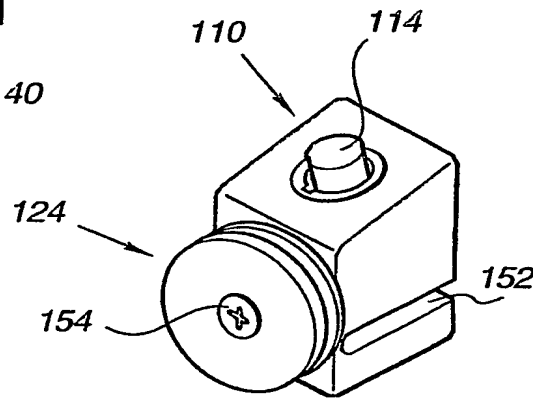


FIG. 9

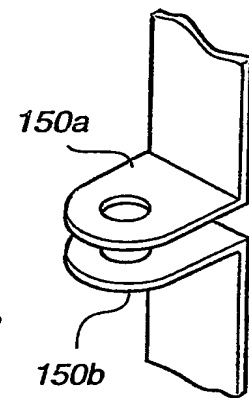


FIG. 10

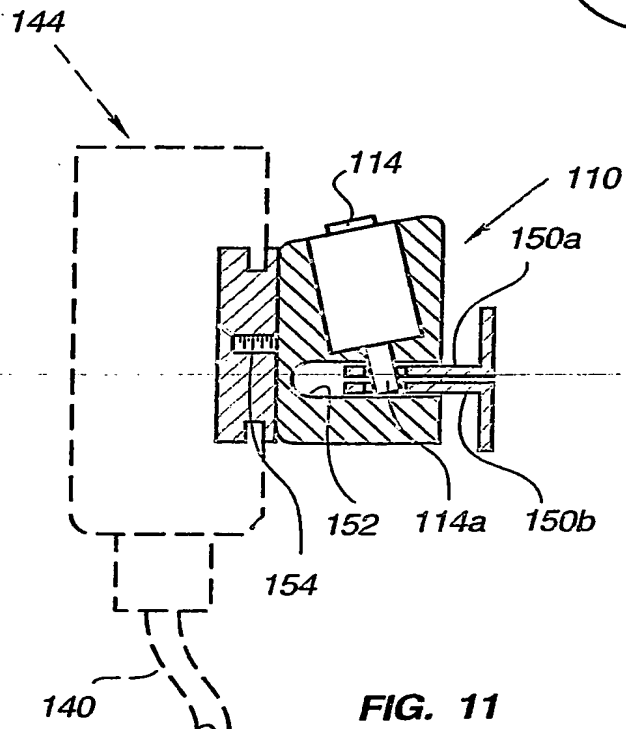
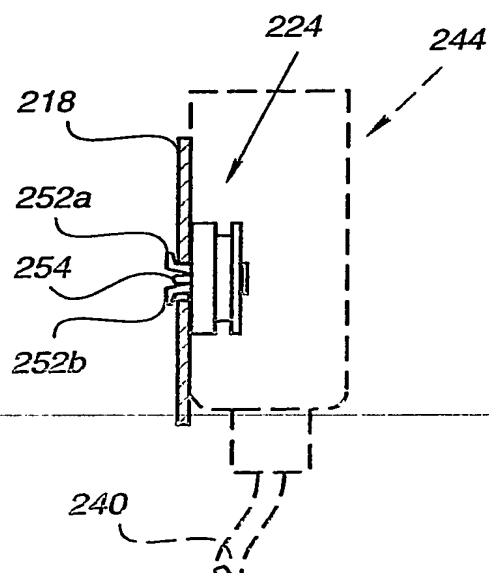
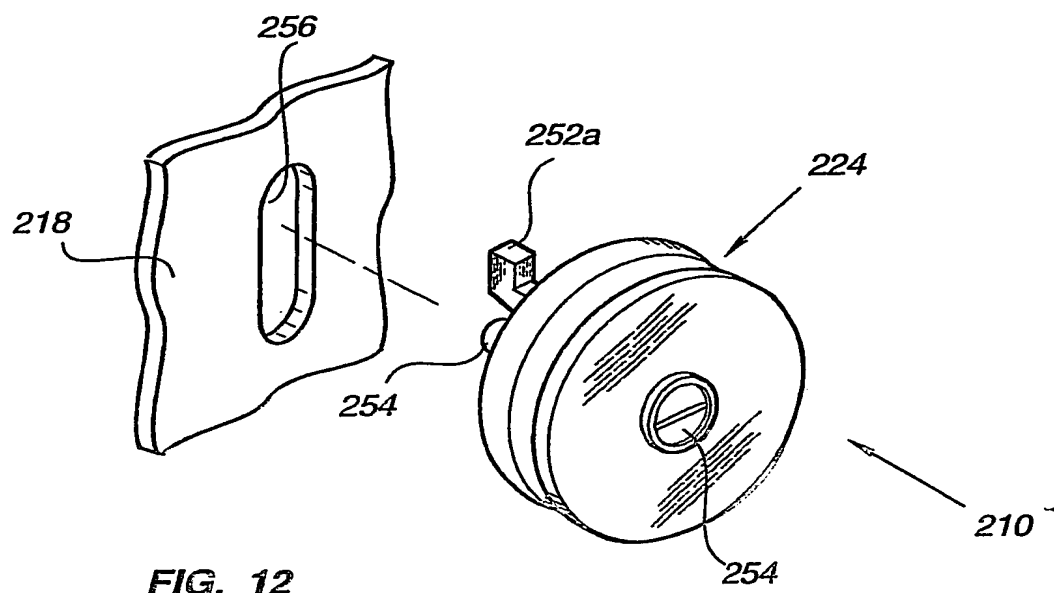


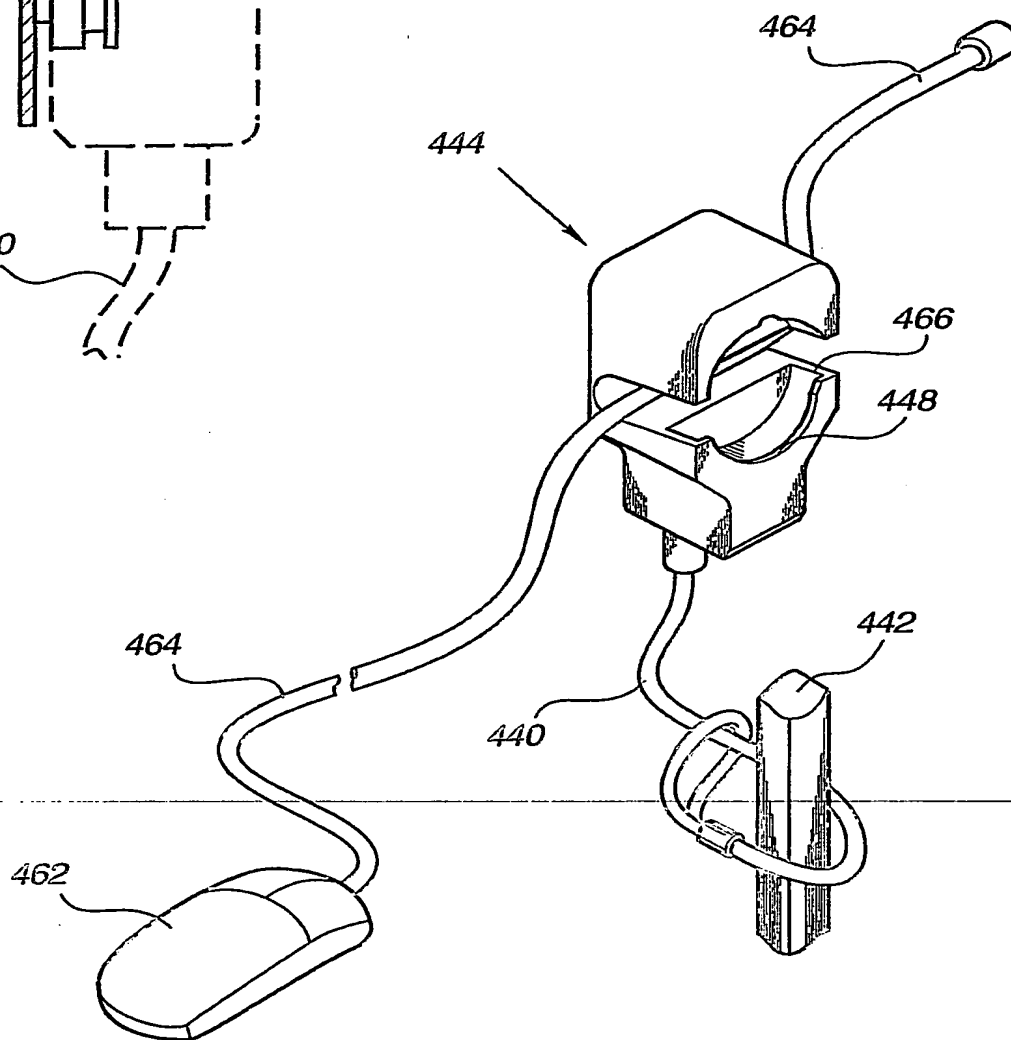
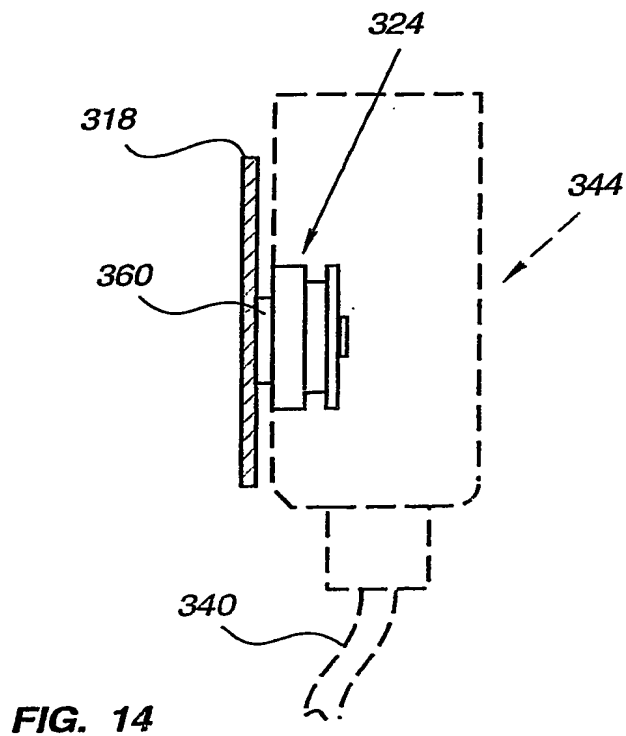
FIG. 11

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL2004/000059

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 E05B73/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 317 936 B1 (RISTUCCIA JOHN ET AL) 20 November 2001 (2001-11-20) the whole document ---	1
A	US 4 893 777 A (GASSAWAY MARK M) 16 January 1990 (1990-01-16) the whole document ---	1
A	US 4 973 023 A (O'NEILL EDWARD L) 27 November 1990 (1990-11-27) the whole document ---	1
A	EP 0 839 978 A (WARMBOLD MICHAEL) 6 May 1998 (1998-05-06) the whole document ---	1
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 244 082 B1 (AVGANIM MEIR) 12 June 2001 (2001-06-12) cited in the application the whole document ---	1
A	US 5 327 752 A (MYERS GARY L ET AL) 12 July 1994 (1994-07-12) cited in the application the whole document ---	1
A	US 6 360 405 B1 (RISTUCCIA JOHN ET AL) 26 March 2002 (2002-03-26) the whole document -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL2004/000059

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6317936	B1	20-11-2001	US 6081974 A	04-07-2000
			US 6360405 B1	26-03-2002
			EP 1203166 A1	08-05-2002
			WO 0079142 A1	28-12-2000
US 4893777	A	16-01-1990	US 5013000 A	07-05-1991
US 4973023	A	27-11-1990	NONE	
EP 0839978	A	06-05-1998	SE 509163 C2	14-12-1998
			EP 0839978 A1	06-05-1998
			SE 9604018 A	02-05-1998
US 6244082	B1	12-06-2001	IL 120090 A	28-10-1999
			AU 5777898 A	18-08-1998
			WO 9832939 A1	30-07-1998
US 5327752	A	12-07-1994	US 5400629 A	28-03-1995
US 6360405	B1	26-03-2002	US 6317936 B1	20-11-2001
			US 6081974 A	04-07-2000
			EP 1203166 A1	08-05-2002
			WO 0079142 A1	28-12-2000